

## **REMARKS**

Favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

The subject matter of claim 2 has been incorporated into claim 1. Claim 6 has accordingly been cancelled.

The language objected to by the Examiner in claim 4 has been removed as being unnecessary. However the Examiner is requested to note that "Grown in nuclei" refers to plural "nuclei" whereas "Grown in nucleus" refers to a singular "nucleus". Please see page 2, lines 7 and 21 of the specification. Accordingly in the amended claims, it is believed that the correct idiom for the term "Grown in nuclei" has been retained without the singular article "a".

In view of the amendments to claim 4, the rejection of claim 4 under 35 USC 112 is deemed to be overcome.

The rejection of claims 1, 2 and 4 under 35 USC 103 as unpatentable over JP 2001-274167 A (JP '167 A) is respectfully traversed as applied to the amended claims.

Initially, Applicants enclose for the Examiner's information a machine translation of JP 2001-274167 A, which was obtained from the website of the Japanese Patent Office.

The amended claims require that the silicon single crystal substrate be heat treated in an oxidizing atmosphere prior to epitaxial growth, so that Grown in nuclei are grown in the silicon single crystal substrate but stacking faults in the form of a ring are not generated. The "stacking faults" in the claims mean oxidation induced stacking faults or "OSF" (see page 3, line 16 of the present description). The OSF can be annihilated by increasing a V/G value in a pulling process, as described in page 8, line 4 of the present description.

On the other hand, paragraph [0012] of JP '167 A says "a ring-like distribution stacking fault...as characteristic crystal defect formed only in an epilayer (see the machine translation of the description of JP '167 A).

Further, in paragraph [0017] of JP '167 A, it says that it turned out that the field in which a ring-like distribution stacking fault generates is the inside (namely, void area side) of an OSF field in the silicon single crystal wafer before epilayer deposition. Also, the same paragraph says that with the wafer in which the void area has contracted and annihilated in the center of the wafer, it became clear that the ring-like distribution stacking fault after epilayer deposition is

reduced to 0.5 defect/cm<sup>2</sup> or less (see the English abstract of JP '167 A). Thus, JP '167 A does not avoid a deposition of an epilayer on the OSF area. Rather, contracting the void area would result in a deposition of an epilayer on the OSF area.

On the other hand, a key feature of the present invention, as described in the claims and in the first paragraph on page 8 and its following paragraphs, is that the deposition of the epilayer is carried out after annihilating the OSF in a peripheral portion of the crystal.

Accordingly, the amended claims require a deposition of an epilayer in a void area, therefore an epilayer must not be deposited according to the teachings of JP '167 A. Thus, the present invention is totally different from that of JP '167 A.


It is obvious that certain clear differences exist between the present invention as claimed and the prior art relied upon by the Examiner. The present invention as claimed was not anticipated and would not have been obvious to a person of ordinary skill in the art at the time the invention was made viewing that prior art.

In view of the foregoing, it is believed that each ground of rejection set forth in the Official Action has been overcome, and that the application is now in condition for allowance.

Accordingly, such allowance is solicited.

Respectfully submitted,

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January 29, 2007